BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Applications of	)	
	)	
HAWAIIAN ELECTRIC COMPANY, INC.	)	Docket No. 2015-0389
HAWAI'I ELECTRIC LIGHT COMPANY, INC.	)	
MAUI ELECTRIC COMPANY, LIMITED and	)	
	)	
KAUAI ISLAND UTILITY COOPERATIVE	)	
	)	
For Approval to Establish a Rule to Implement	)	
A Community-Based Renewable Energy	)	
Program and Tariff and Other Related Matters	)	
	)	

HAWAIIAN ELECTRIC COMPANIES'
COMMENTS ON COMMUNITY-BASED RENEWABLE ENERGY PHASE 2

AND

CERTIFICATE OF SERVICE

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MAUI ELECTRIC COMPANY, LIMITED,
HAWAI'I ELECTRIC LIGHT COMPANY, INC.

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Hawaiian Electric Company, Inc., Hawai'i Electric Light Company, Inc. and Maui Electric Company, Limited (collectively the "Companies") respectfully submit their Comments in response to the Technical Conference held on July 25, 2019 regarding the Community-Based Renewable Energy ("CBRE") Phase 2 program design.

I. INTRODUCTION AND SUMMARY

In 2015, Act 100[1] took effect, which required each electric utility to file proposed CBRE tariff(s), with the goal of making the benefits of renewable energy more accessible to a broader set of Hawai'i residents and businesses. In December of 2017, the Commission issued the CBRE Decision & Order Program Framework ("CBRE Framework"), [2] which provided program guidelines for both Phase 1 and Phase 2 of the CBRE program. Since the CBRE Framework was

[1] 2015 Hawai'i Session Laws Act 100, §§ 1-2 at 249-251 ("Act 100"); signed into law on June 8, 2015

[2] See *Community-Based Renewable Energy – A Program Framework* (the "Framework" or "CBRE Framework") attached as Exhibit A to Decision & Order No. 35137 ("D&O 35137"), in Docket No. 2015-0389

issued, the Companies, the Commission, and the Participants have worked collaboratively to develop and implement many initiatives that impact the CBRE operating ecosystem. These initiatives are outlined in Figure 1 and should be considered when designing the Phase 2 program.

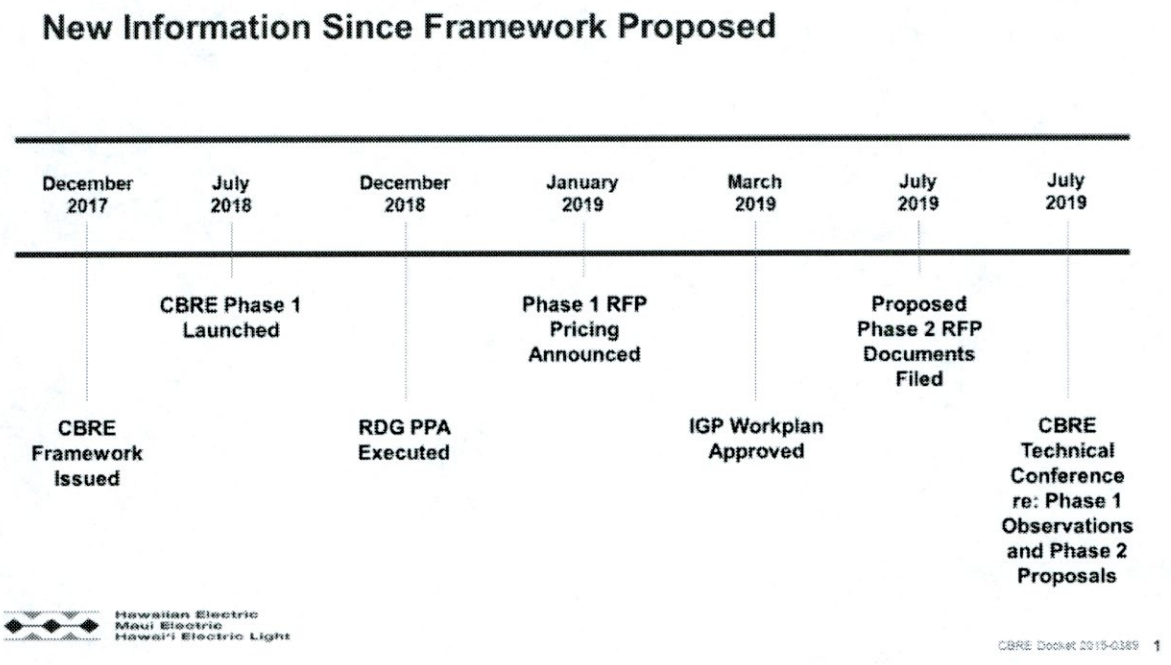


Figure 1: Initiatives implemented since December 2017 impacting the CBRE operating context

The Companies look forward to collaborating with the Commission and the Participants in designing Phase 2 of the CBRE program to ensure that achieves the goals for CBRE outlined in Act 100, including: expanding access to renewable energy generation to more utility customers and providing fair compensation for electricity, electric grid services, and other benefits provided to or by the electric utility, participating customers, and non-participating customers.

While not fully operational, Phase 1 of the CBRE program has provided the Companies, the Commission, the Participants, the Independent Observer ("IO"), and the Division of Consumer Advocacy, Department of Commerce and Consumer Affairs ("Consumer Advocate")

with valuable input on CBRE program design elements that have arguably enabled and/or prevented the program from meeting the goals outlined in Act 100. Building on these lessons learned from Phase 1, the Companies have noted areas of concern that they believe need to be addressed when designing Phase 2 of the program. The Companies believe the following proposed changes to the Phase 2 guidelines outlined in the CBRE Framework will enable the program to better meet the legislative goals for CBRE:

1. Refine the Phase 2 credit rate structure to utilize the Renewable Dispatchable Generation ("RDG") Power Purchase Agreement ("PPA") model and to cap credit rates at the Stage 1 RFP pricing with a premium to account for CBRE-specific costs in order to ensure fair compensation for Subscriber Organizations ("SOs"), participating customers ("Subscribers"), and non-participating customers;
2. Increase total program and individual project capacity to allow for larger projects that capture economies of scale;
3. Leverage a Request for Proposal ("RFP") process to award Phase 2 capacity to ensure Phase 2 SOs are those that can deliver programs aligned to interests of participating and non-participating customers; and
4. Ensure SOs serve a variety of customer segments, including residential and LMI customers.

Credit Rate Structure and Rate Caps:

The CBRE Framework proposes a credit structure and rates for Phase 2 of the CBRE program, with unique rates by island and Standard and Peaker facilities. Further, the credit rate for Standard facilities would be time-differentiated dependent on the time of CBRE facility output. Under the CBRE Framework, the Phase 2 credit rates would likely be variable, assuming the Competitive Credit Rate Procurement ("CCRP") mechanism would be triggered during the SO application period, with the rates outlined in Table 1 acting as the Phase 2 credit rate caps.

	Standard CBRE Facilities			Peaker CBRE Facilities
	Off-Peak 10 PM - 9 AM (cents/kWh)	Mid-Day 9 AM - 5 PM (cents/kWh)	On-Peak 5 PM - 10 PM (cents/kWh)	>85% of total output during On-Peak 5 PM - 10 PM (cents/kWh)
O'ahu	16.50	15.00	18.00	28.00
Hawai'i Island	16.50	15.00	18.00	28.00
Maui	18.15	16.50	19.80	29.80
Moloka'i	24.75	22.50	27.00	37.00
Lāna'i	28.60	26.00	31.20	41.20

Table 1: Phase 2 Credit Rates proposed in the CBRE Framework (cents / kWh)[3]

The Companies, technology, and the renewable energy ecosystem have evolved since the CBRE Framework was issued in December 2017; as such, the Companies recommend two changes to the Phase 2 credit rate structure proposed in the CBRE Framework:

1. Transition the credit structure to an RDG PPA model, which was used successfully in Stage 1 RFPs; and
2. Adjust the credit rate caps proposed in the CBRE Framework to the Stage 1 RFP pricing with a $0.02 premium to account for CBRE-specific costs.

Under the Phase 2 credit rate structure outlined in the CBRE Framework, Subscriber and SO compensation would be based on the total kWh produced by the Facility in a given month. The RDG PPA model would instead compensate Subscribers and SOs with a fixed lump sum payment based on capacity and availability. The Companies believe that the use of the RDG PPA model will benefit the Phase 2 CBRE program by: (a) reducing the complexity of Phase 2 credit rates by eliminating the need for time variable credit rates and compensable curtailment; (b) providing monthly credit guarantees to SOs and Subscribers so long as the Facility is available; (c) enabling the Commission to reduce the Phase 2 credit rate caps, thereby reducing subsidies paid by non-participating customers; and (d) improving grid reliability. Under the RDG PPA

[3] See CBRE Framework attached as Exhibit A to D&O 35137, in Docket No. 2015-0389, at page 11

model, SOs may still be issued penalties, such as reductions in the lump sum payments paid to SOs for unsubscribed capacity and others that are currently in place within existing RDG PPAs.

The Stage 1 RFPs were approved by the Commission in March 2019 for six solar-plus-storage projects on O'ahu, Maui, and Hawai'i Island.[4] The prices are significantly lower than the proposed Phase 2 credit rates. The table below outlines the average cost per kWh for the Stage 1 RFPs solar-plus-storage projects.

	Average Approved Stage 1 RFP price (cents/kWh)
O'ahu	9.69
Hawai'i Island	8.50
Maui	8.00
Moloka'i	N/A
Lāna'i	N/A

Table 2: Stage 1 RFP pricing (cents / kWh)[5]

The Phase 2 credit rates proposed in the CBRE Framework represent a premium to pricing signals from Stage 1 RFPs, meaning non-participating customers will subsidize the Phase 2 program. Based on the Stage 1 RFP prices, it should be feasible to lower the Phase 2 credit rate caps in an effort to reduce the premium of CBRE credit rates that will be subsidized by non-participating customers. Adjusting the Phase 2 credit rate caps proposed in the CBRE Framework will ensure the program is aligned to the legislative goal of providing fair compensation for participating and non-participating customers. The Companies recognize that the CBRE Facilities' cost per kWh may be higher than those of the Stage 1 RFPs given CBRE SOs are subject to additional costs related to customer management and acquisition. The

[4] "Six low-price solar-plus-storage projects approved for O'ahu, Maui, and Hawai'i islands"

[5] Stage 1 RFP pricing: "Six low-priced solar-plus-storage projects approved for O'ahu, Maui and Hawai'i islands" published March 27, 2019

Companies recommend that the Phase 2 credit rate caps be set at the Stage 1 RFP pricing signals with a $0.02 added premium to for account for CBRE-specific costs.

Program and Project Capacity:

For Phase 2 of the CBRE program, the CBRE Framework outlines unique program capacity for both Standard and Peaker Facilities, the latter of which deliver 85% of their energy during the On-Peak hours of 5 p.m. to 10 p.m. In total, the CBRE Framework allocated a total Phase 2 capacity of 64 MW across all islands and facilities. The below table outlines the specified capacities for Phase 2 by island and facility type.

Island	CBRE Capacity Target (MW) for Phase 2		
	Standard CBRE Facilities	Peaker CBRE Facilities	Utility CBRE Facilities
O'ahu	19	18	6.5
Hawai'i Island	5.5	3	1
Maui	5.5	3	1
Moloka'i	N/A	0.5	0.25
Lāna'i	N/A	0.5	0.25
Facility Total	30	25	9
Phase 2 Total	**64**		

Table 3: Phase 2 program capacity by island and technology as proposed in the CBRE Framework[6]

The Companies recommend that the Phase 2 capacity target be significantly increased to a total of 235 MW. The total recommended capacity is based on shortfalls in installed rooftop photovoltaic ("PV") from the five-year forecast for renewable resources outlined in the Power Supply Improvement Plan ("PSIP").[7] Increasing the total capacity will benefit the program by enabling larger caps on individual projects, which in turn should attract a broader pool of SOs. Additionally, larger projects will create improved economies of scale, which could enable lower

[6] See CBRE Framework attached as Exhibit A to D&O 35137, in Docket No. 2015-0389, at page 11

[7] Hawaiian Electric Power Supply Improvement Plan Docket No. 2014-0183

credit rates, reducing non-participant subsidies, without impacting SO or Subscriber benefits.

To ensure the Phase 2 capacity is made available to a broad set of SOs, the Companies recommend the total program capacity be segmented into two unique capacity targets for small and large facilities, with large facilities being those that meet the size threshold for participation in the Stage 1 RFPs, outlined in Table 6 in the Program and Project Capacity section. The Companies recommend a preliminary carve-out of 20% of total program capacity dedicated to small facilities below the RFP threshold size. The Companies' recommendation for Phase 2 capacity by island is outlined in Table 4 below.

	Capacity for facilities above RFP MW threshold (MW)	Capacity for facilities below RFP MW threshold (MW)	Total Phase 2 Capacity (MW)
O'ahu	134	33	167
Hawai'i Island	24	6	30
Maui	26	6	32
Moloka'i	2	1	3
Lāna'i	2	1	3
Total	**188**	**47**	**235**

Table 4: Phase 2 capacity recommendation by island and facility size

Awarding Phase 2 Capacity to Subscriber Organizations:

In Phase 1 of the CBRE program, capacity was awarded to SOs on a first-come, first-serve basis. The CBRE Framework proposes that Phase 2 capacity be awarded to qualified SOs[8] through the CCRP mechanism, which selects SOs with the lowest discounted credit rate bids. Given the Companies are recommending an increase to eligible project sizes, they believe that Phase 2 should use a formal RFP process to award capacity to projects above the Stage 1 RFP participation threshold. However, the Companies recognize that formal RFP processes can be

[8] Qualified facilities are those that comply with bid requirements outlined in the CBRE Framework attached as Exhibit A to D&O 35137, in Docket No. 2015-0389, at page 17

resource intensive for SOs, particularly those that bid on smaller projects. As such, the Companies recommend that the CCRP mechanism proposed in the CBRE Framework be used to award capacity for smaller projects, reserving the use of the RFP to award capacity to projects above the Stage 1 RFP participation threshold.

Residential and LMI Subscription Requirements and Incentives:

Based on the outcomes of Phase 1 of the CBRE program, the Companies are concerned with ensuring that residential customers will have access to Phase 2 capacity. The Companies recommend that Phase 2 incorporate mechanisms to incentivize or require third party SOs to subscribe residential and/or LMI customers. Potential mechanisms could include: (a) required carve outs for residential or LMI customer segments for each SO; (b) unique credit rates for residential and/or LMI customer segments to incentivize residential or LMI targeting; (c) a total program capacity allocation target set during the RFP process, allowing bidders to set their own residential or LMI commitments, with a bid's commitment included as an RFP evaluation criteria; or (d) a combination of the proposed potential mechanisms.

In the CBRE Framework, the only customer segment requirement for Phase 2 is for Utility Facilities, requiring at least 50% of Utility Facility capacity be reserved for LMI customers.[9] Based on the Commission's recommendation on Phase 2 capacity of 64 MW, 9 MW of which is for Utility Facilities, a total of 4.5 MW would be reserved for LMI customers. If the CBRE Framework is adopted in its current form, a third party SO would be eligible to target only commercial Subscribers. Given commercial Subscribers tend to have lower acquisition costs, there is the potential that third party SOs may primarily target commercial Subscribers, meaning that without residential or LMI requirements or incentives for third party SOs, as little as 7%[10] of

[9] See CBRE Framework attached as Exhibit A to D&O 35137, in Docket No. 2015-0389, at page 10

[10] = 4.5 MW / 64 MW

the total Phase 2 program capacity could be allocated to residential Subscribers. The Companies understand that such an outcome would not sufficiently meet the CBRE legislative goal of facilitating "the participation of currently underserved customers, that is, those customers that have traditionally not had access to investment opportunities in distributed renewable energy, including renters of residential households, owners of multi-unit dwelling property, nonprofit organizations, and small commercial customers."[11]

II. COMMENTS ON PHASE 2 PROGRAM DESIGN

A. Credit Rate Structure and Rate Caps

For Phase 2 of the CBRE program, the Companies recommend the use of the RDG PPA model, which replaces traditional seniority-based curtailment – newest facilities curtailed first – with a system that dispatches generation and is applicable across commercially available renewable technologies, namely solar, solar-plus-storage, wind, and wind-plus-storage. The RDG PPA contract provides developers with a fixed monthly payment based on a renewable energy facility's availability, and in return, developers give the Companies dispatch rights over the renewable energy facility. The RDG PPA model was used in the Stage 1 RFPs with success, resulting in record low bids for renewable energy projects, as outlined in Table 2 and Figure 2. The Companies believe that the use of the RDG PPA contract model will benefit the Phase 2 CBRE program by: (a) reducing the complexity of Phase 2 credit rates by eliminating the need for time of day pricing and compensable curtailment; (b) providing monthly credit guarantees to SOs and Subscribers so long as the facility is available; (c) enabling the Commission to reduce the Phase 2 credit rate caps, thereby reducing subsidies paid by non-participating customers; and (d) improving grid reliability.

[11] 2015 Hawai'i Session Laws Act 100, §§ 1-2 at 249-251 ("Act 100"); signed into law on June 8, 2015

When the CBRE Framework was issued, the Companies did not have an approved PPA model that could effectively manage seniority-based curtailment. As the Commission developed the CBRE Phase 1 Tariff, Rule 26, curtailment was a significant point of discussion given its impacts can jeopardize the economics of the CBRE model for both SOs and Subscribers. Additionally, the risk of curtailment will continuously increase as the grid becomes increasingly penetrated with renewables. As a result, Phase 1 SOs are eligible for compensation for any 'Compensable Curtailment Events' as defined in the Phase 1 Standard Form Contract.[12] The implementation of the compensable curtailment model creates systemic inequities: non-participating customers pay for the compensation stemming from compensable curtailment events and older, existing energy-only renewable projects are curtailed before CBRE Phase 1 Facilities, lowering their total energy payments. Additionally, the administration of compensable curtailment events could become more administratively complex with the implementation of the time-variable credit rate structure proposed in the CBRE Framework. The use of the RDG PPA model can help address the concerns the Companies have with the CBRE Phase 1 curtailment model by reducing the inequities and administrative burden without negatively impacting total compensation for SOs.

Under the RDG contract model, developers are provided a fixed monthly payment, regardless of the energy produced by the renewable energy facility. This is a departure from the payment structure proposed by the CBRE Framework, in which the value of the credit is determined by the energy produced by the CBRE facility in a given month. The fixed monthly

[12] "Compensable Curtailment Event" shall mean any Curtailment Event other than a Curtailment Event due to (a) an Emergency, (b) a Forced Outage, (c) the PV System not operating in compliance with good engineering and operating practices, as required by the terms of the Interconnection Agreement, (d) the Company's construction, installation, maintenance, repair, replacement, removal, investigation, testing or inspection of any of its equipment or any part of the Company system, including accommodating the installation and/or acceptance test of non-utility owned facilities to the Company system, or (e) Force Majeure, as defined in Section 21(j) of the Interconnection Agreement.

payment structure provides more stable revenue streams and credit values, benefitting both SOs and Subscribers. More stable revenue streams may allow for improved financing for SOs, decreasing the total facility cost, and may also work to incentivize Subscriber participation as the RDG PPA model will reduce the financial risk associated with an investment with variable monthly credits.

Additionally, as the grid continues to interconnect renewable energy facilities to meet the renewable portfolio standard ("RPS"), facilities contracted under an RDG model provide needed grid reliability benefits. The ability to dispatch the RDG facilities allows the Companies to use the undispatched energy to regulate voltage and respond to frequency events.

While the RDG model provides a fixed monthly payment to SOs, SOs may be assessed liquidated damages. The RDG contract includes performance guarantees for availability and performance, with separate liquidated damages applicable to the generating facility and the battery storage system. If the RDG model is used for CBRE Phase 2 facilities, CBRE specific performance metrics, including unsubscribed capacity, will need to be incorporated into the penalty structure. The Companies understand that a CBRE specific penalty structure under the RDG PPA model will need to be assessed with the Commission and Participants before the commencement of Phase 2.

The Companies are concerned with the Phase 2 credit rates proposed in the CBRE Framework, outlined in Table 1, and the premium for energy they will impose on non-participating customers over the life of the CBRE program. The Companies recommend that the Phase 2 credit rate caps be adjusted downwards to equal Stage 1 RFP pricing with a $0.02 per kWh premium to account for CBRE specific costs, while still allowing for credit rate variability by SO based on competitive bids. The Companies' recommendation on Phase 2 credit rate caps

are outlined in Table 5 below. Under both the RFP and CCRP processes the Companies are recommending to award Phase 2 capacity, SOs would set their own credit rates; the Phase 2 credit rate caps the Companies are proposing should be viewed as the credit rate threshold for consideration when SOs submit bids to the Phase 2 CBRE program. The credit rate SOs submit with their bids for the CBRE program would be the rate credited to Subscribers over the lifetime of the Phase 2 program.

	Average Stage 1 RFP PPA price for solar-plus-storage (cents/kWh)	CBRE Phase 2 credit rate caps for dispatchable renewables (cents/kWh)	Average Stage 1 RFP PPA price for solar-plus-storage minus estimate of Storage as a portion of the PPA (cents/kWh)	CBRE Phase 2 credit rate caps for non-dispatchable renewables (cents/kWh)
O'ahu	9.69	11.69	7.10	9.10
Hawai'i Island	8.50	10.50	5.98	7.98
Maui	8.00	10.00	4.76	6.76
Lanai	N/A	N/A	N/A	N/A
Molokai	N/A	N/A	N/A	N/A

Table 5: Recommended Phase 2 Credit Rate caps by island and dispatchability

The Companies believe that the Phase 2 credit rate caps set in the CBRE Framework are too high and go against the Consumer Advocate's position that "CBRE credit rates should not be set to drive or subsidize the development and adoption of particular technologies or programs. While market innovation is important, the resulting products and services should not be adopted unless they provide truly cost-effective alternatives and solutions that will benefit all customers."[13] In line with the Consumer Advocate's position, the Companies recommend that Phase 2 credit rate caps be adjusted downward and believe that such an adjustment is feasible based on the record low pricing for renewable resources contracted through the Stage 1 RFP.

[13] Division of Consumer Advocacy's initial comments on draft Hawai'i Public Utilities Commission Staff Proposal for Community-Based Renewable Energy Program; filed June 30, 2016 in Docket No. 2015-0389

Figure 2 outlines the average pricing from the Stage 1 RFPs for solar-plus-storage facilities, weighted by facility size; estimates of the solar only pricing from the Stage 1 RFPs, weighted by facility size; and the Phase 2 Mid-Day credit rate for Standard Facilities and Peaker Facilities as proposed in the CBRE Framework.

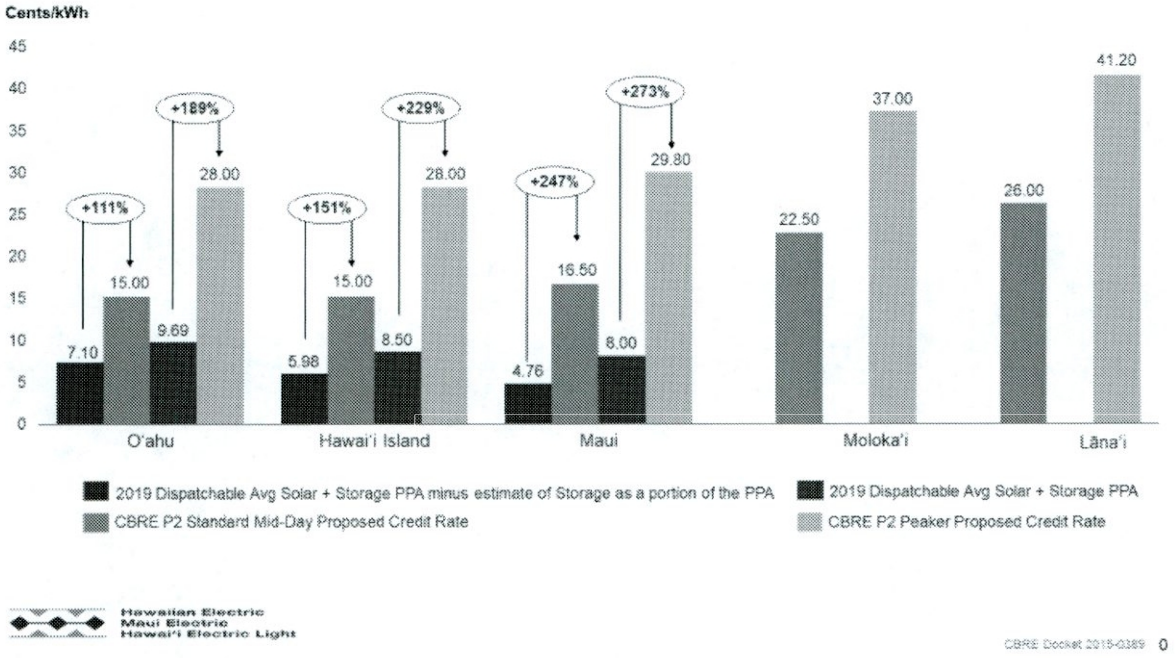


Figure 2: Stage 1 RFP prices and Phase 2 credit rates proposed in the CBRE Framework[14]

The Phase 2 credit rates proposed in the CBRE Framework are at significant premiums to the pricing signals from the Stage 1 RFP bids for solar and solar-plus-storage technology and will require non-participating customers to subsidize Phase 2. Such premiums imposed by the

[14] CBRE P2 Credit Rates: See CBRE Framework at page 13 and page 14; 2019 Dispatchable Solar + Storage PPA: See *Six low-priced solar-plus-storage projects approved for Oahu, Maui and Hawaii islands* published March 27, 2019; 2019 Dispatchable Avg Solar + Storage PPA minus estimate of Storage as a portion of the PPA: See CA-IR 1 Dockets: 2018-0439, 2018-0436, 2018-0432, 2018-0432, 2018-0433, 2018-0434, 2018-0435

proposed Phase 2 credit rates do not align with the legislative requirement outlined in Act 100 to "provide fair compensation for electricity… provided to or by the electricity utility, participating ratepayers, and non-participating ratepayers."[15]

The Companies recognize that CBRE Facilities may have a higher cost per kWh than Facilities participating in the Stage 1 RFPs given CBRE Facilities have added overhead costs associated with customer acquisition and management. However, Standard Facility credit rates 111% to 247% and Peaker Facility credit rates 189% to 273% greater than price signals from the Stage 1 RFP, as outlined in Figure 2, represent unjustifiably high premiums for CBRE-specific costs.

The Companies recommend a premium of $0.02 per kWh be added to the Stage 1 pricing to establish Phase 2 credit rate caps based on reports that estimate customer acquisition and management costs for CBRE and/or residential rooftop PV costs. In the National Renewable Energy Laboratory's ("NREL") 'U.S. Solar Photovoltaic System Cost Benchmark: Q1 2018' report, customer acquisition costs accounted for $0.41 per installed watt, or 14.4% of the total estimated installation cost for residential PV installations in Hawai'i.[16] Wood Mackenzie estimates first year subscriber acquisition and management costs between $0.12 and $0.15 per installed watt and ongoing subscriber management and replacement costs between $0.12 and $0.35 for community solar facilities serving a mix of commercial and residential customers.[17] Finally, research referenced in drafting credit rates for Rhode Island's community remote distributed generation program estimates first year customer acquisition costs to be $0.25 per

[15] 2015 Hawai'i Session Laws Act 100, §§ 1-2 at 249-251 ("Act 100"); signed into law on June 8, 2015

[16] National Renewable Energy Laboratory *U.S. Solar Photovoltaic System Cost Benchmark: Q1 2018*, published November 2018

[17] Wood Mackenzie *The Vision for U.S. Community Solar*, published July 2018

installed watt and ongoing customer replacement and management costs to be $0.03 per installed watt per year. [18] The Companies believe these estimates for customer acquisition and management support an average per kWh premium of $0.02 relative to Stage 1 pricing to account for CBRE-specific costs.[19] Based on available reports, the Companies believe that setting Phase 2 credit rate caps at Stage 1 RFP price signals with a $0.02 premium for CBRE specific costs will be sufficient to attract SOs and Subscribers. The Companies' recommendation to adjust the Phase 2 credit rate caps to reflect Stage 1 RFP pricing signals will help reduce the subsidies paid by non-participating customers; this ensures the program is aligned to the legislative goal of a providing fair compensation structure for participating and non-participating customers.

The Companies recognize that Stage 1 RFP pricing is representative of utility scale resources and that facilities of sizes below the RFP participation threshold may have a higher cost per kWh facilities awarded capacity via the Stage 1 RFP; as such, the Companies, Commission, and Participants should work together to determine if unique credit rate caps are necessary for Phase 2 CBRE facilities of sizes below the RFP participation threshold. Additionally, using the CCRP mechanism to award capacity to smaller projects and the RFP for larger projects will allow prospective SOs to compete on price only among projects of a similar size.

B. Program and Project Capacity

The current CBRE Framework proposes 64 MW of capacity for Phase 2, with carve outs

[18] See Sustainable Energy Advantage, LLC.; Meister Consultants Group, Inc.; and Mondre Energy, Inc. *Rhode Island Renewable Energy Growth Program: Ceiling Price Recommendations* published September 2016

[19] Calculated by modeling total upfront and ongoing customer acquisition costs for a 1 MW facility using the $/watt figures estimated in reports referenced herein and dividing the estimate of the lifetime customer acquisition and management cost by the total expected lifetime kWh output from a 1 MW facility. Output estimates assume a capacity factor of 18%, an annual degradation of 0.75% per year, and a program lifetime of 20 years.

by facility type – Standard, Peaker, and Utility. Based on observations and feedback during Phase 1, both the project size limit and the program capacity allocated for Phase 1 were too small to attract various types of SOs. The Companies believe a larger capacity offering will naturally allow for larger facilities, which will generate opportunities to create carve outs for various customer segments, e.g., residential customers, commercial customers, LMI customers. Based on these observations and feedback from various stakeholders, the Companies recommend increasing the CBRE Phase 2 capacity to 235 MW, with competitive bidding in place to ensure the credit rate structure is set appropriately by the market. This provides various benefits beyond attracting SOs. The Companies will have a better understanding of the market premium needed to further support SO interest in developing CBRE Facilities. It is anticipated that SOs can leverage economies of scale to drive down facility costs and create more attractive offerings to elicit Subscriber interest in participating in the CBRE program. The Companies' capacity recommendation was derived in part from the potential shortfall in adoption of Distributed Energy Resources ("DER") systems compared to the forecasted adoption rate as outlined in the Companies' PSIP over the next five years. Allowing the CBRE program to help fill this capacity will provide a contingency for this potential shortfall.

The Companies also recognize the importance of creating opportunities for all SOs to develop CBRE Facilities. The Companies' initial proposal is to reserve 20% of the Phase 2 program capacity for facility sizes up to the RFP thresholds, outlined in Table 6 below, which would make 47 MW available for SOs interested in developing smaller facilities. The average size of all Phase 1 projects that have been allocated capacity or are in the queue is just above 850 kW. That would allow for 55[20] similar-sized facilities to be built across the Companies' service

[20] = 47 MW / 850 kW

territories. The remaining 80% of capacity (188 MW) would be reserved for larger systems that would be selected based on a formal RFP with project caps based on grid constraints at the time the RFP is issued, similar to how caps were implemented for the Stage 1 RFP.[21] The Companies further recommend that any unallocated Phase 1 capacity at the time the Phase 2 tariff is approved be added to the total capacity for smaller facilities.

There are currently a number of ongoing initiatives the Companies and the Commission are undertaking to quickly and significantly increase the amount of renewable resources connected to the grid, most notably the Stage 2 RFPs, which has a procurement target of approximately 900 MW.[22] The Companies are recommending that the CBRE RFP be staggered with the Stage 2 RFP to allow appropriate resourcing and to ensure appropriate due diligence in evaluating grid needs. Given the rapid pace of change in the Companies' generating portfolio as a result of recent and upcoming renewable RFPs, it will be important to reevaluate grid needs and constraints before issuing a CBRE RFP. The Companies request that if the Commission accepts the recommendation to use an RFP and allow for larger CBRE projects for Phase 2, they also allow for a re-evaluation after the Stage 2 RFP bid selection and before the CBRE RFP is issued to finalize eligible Phase 2 technologies, total Phase 2 program capacity, the percent of Phase 2 capacity allocated to projects of sizes below the RFP participation threshold, and determine if there is sufficient developer appetite for an RFP or if a competitive credit rate process should be leveraged to allocate Phase 2 capacity.

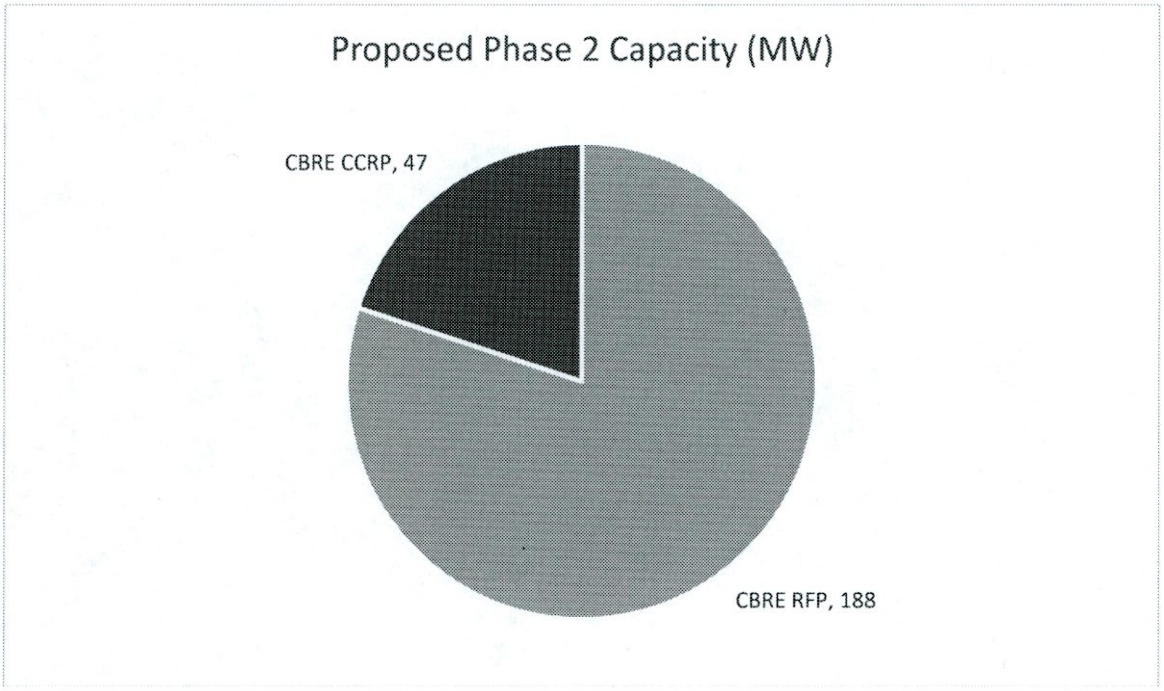
Island	RFP Participation Threshold (MW)
O'ahu	5
Hawai'i Island	2.7

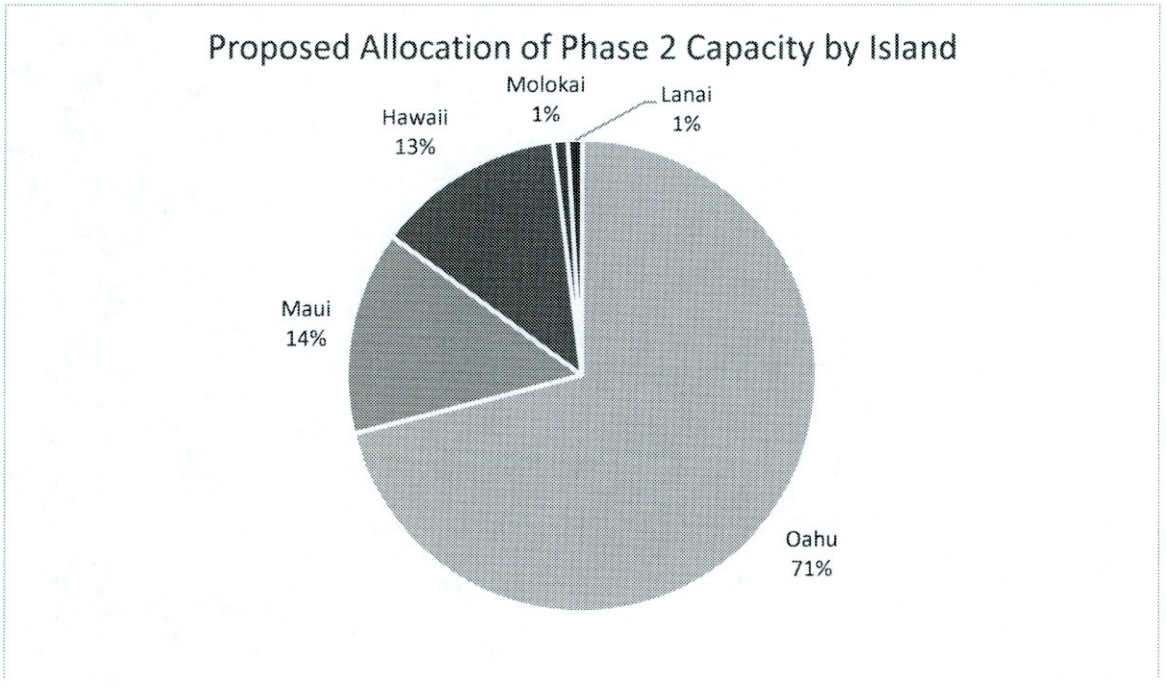
[21] Stage 1 RFP project size caps were 135 MW on O'ahu and 30 MW on Maui and Hawai'i

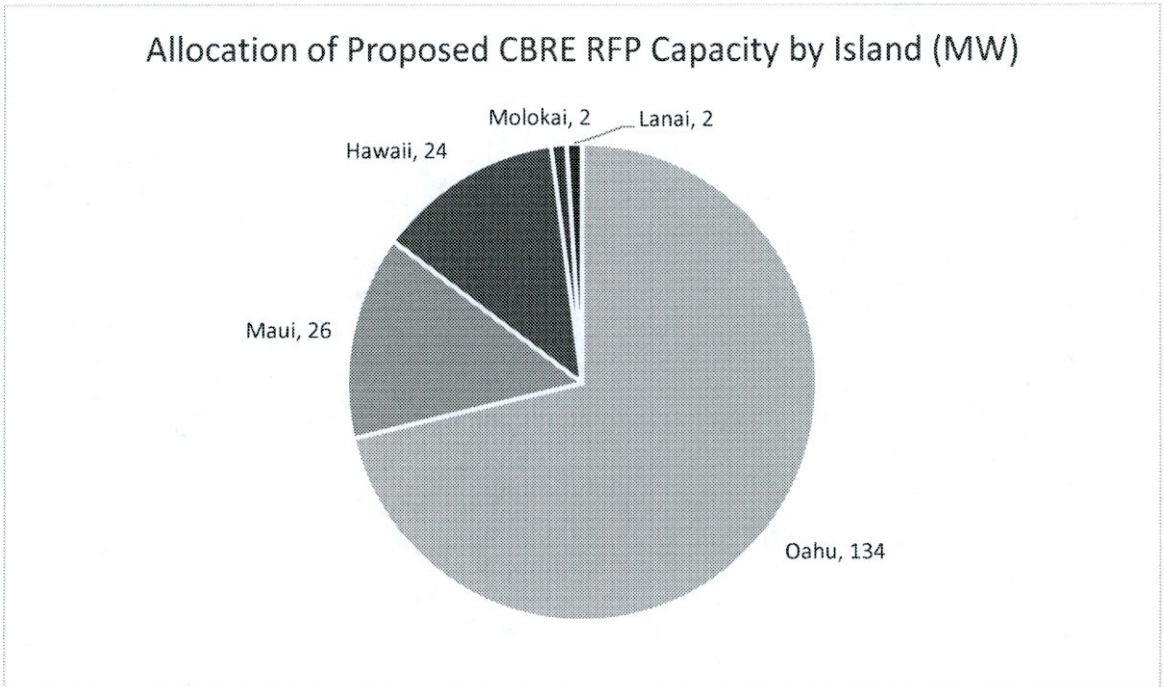
[22] *Hawaii's largest renewable energy push detailed in new procurement plan*

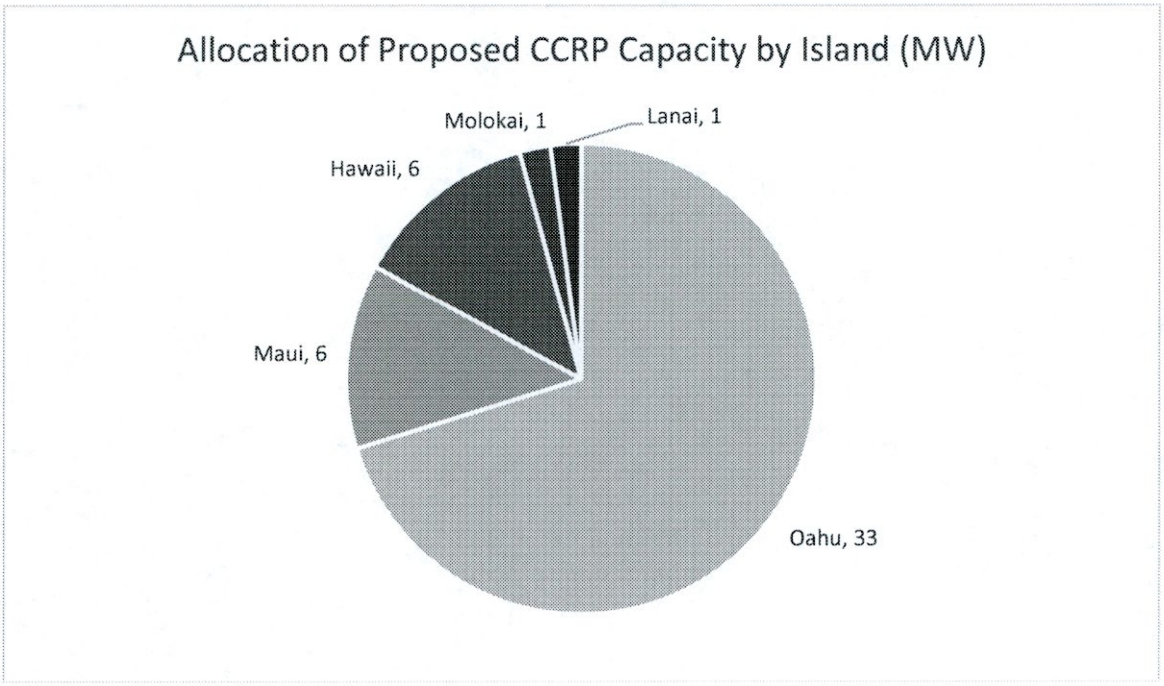
Maui	2.7
Lāna'i	N/A
Moloka'i	N/A

Table 6: Project size threshold for participation in a CBRE RFP









The Companies recognize that if total project capacity is to be significantly increased for Phase 2, it will be critically important to refine the outreach methods used in Phase 1. In Phase 1, the Companies made efforts to publicize the launch of the CBRE program prior to the program's commencement. One of the efforts included a press release that was e-mailed to a broad audience

that included local government agencies, local news media and local renewable energy stakeholders. The Companies also issued a news release announcing the Commission's approval to implement Phase 1.

Most of the press release's audience was comprised of Hawai'i-based groups. There were other audiences that were not contacted directly, including continental and/or international entities with related experience in acquiring land for, engineering, procuring materials for, constructing, and placing into operation PV (or other technologies) projects.

Some of the strategies that will be further evaluated for Phase 2 include: continued outreach to local SOs; expanded direct outreach to continental and/or international SOs; news releases and press releases targeting an expanded audience; continually updating program data on the Companies websites/online portal; and sending update notifications to contacted SOs regrading program updates (i.e., program capacity availability).

C. Awarding Phase 2 Capacity to Subscriber Organizations

The CBRE Framework proposes a capacity allocation process for Phase 2 SOs based on the CCRP mechanism, in which applications for CBRE program capacity will be accepted during a four-month application window and will be placed in a queue. If applications do not exceed the Phase 2 program capacity, qualified SOs will be awarded capacity at the Phase 2 credit rate cap applicable to the facility type. If the total capacity requested exceeds the Phase 2 program capacity at the close of the four-month application window, a CCRP mechanism shall be triggered as a means of awarding capacity.

The Companies recommend the use of an RFP process with evaluation criteria aligned to Stage 2 RFPs to award Phase 2 capacity to SOs. Applying the processes and evaluation criteria set forth in the Stage 2 RFPs will help improve procurement for Phase 2 by allowing for a more

comprehensive evaluation of projects that is aligned with the assessment and selection of larger grid scale resources. This includes the application of several Threshold Requirements that are designed to screen out projects that are insufficiently developed or will impose an unacceptable level of execution risk for the Companies. One of the Threshold Requirements that is included in the Stage 2 RFPs is that proposers are required to demonstrate that they have site control for all real property that is required for the successful implementation of a project as a requirement for further evaluation in the RFP. Site ownership or control is also noted as a bid requirement in the CBRE Framework for Phase 2 Facilities,[23] and the Companies believe that employing the approach included in Stage 1 and 2 RFPs for Phase 2 CBRE Facilities will help to address the site control issues experienced in Phase 1, noted as a key concern by the IO, "The primary factor causing project failure in Phase 1 has been the challenge for some SOs of demonstrating adequate site control for proposed facilities."[24]

In addition to the application of several Threshold Requirements such as Site Control, the evaluation process set forth in the Companies' Stage 2 RFPs also includes the evaluation of several non-price criteria that are indicative of the general feasibility and operational viability of a proposed project. The results of the non-price criteria evaluation are then combined with the results from a similar evaluation which looks at the price of a project in determining a total score for the project. The non-price criteria proposed to be evaluated in the Companies' Stage 2 RFPs are Community Outreach and Cultural Resource Impacts, State of Project Development and Schedule, Performance Standards, Environmental Compliance and Permitting Plan, Experience and Qualifications, Financial Strength and Financing Plan, Contract Exceptions, and Guaranteed Commercial Operations Date. If an RFP process is used for Phase 2, the Companies recommend

[23] See CBRE Framework attached as Exhibit A to D&O 35137, in Docket No. 2015-0389, at page 10

[24] Community-Based Renewable Energy Program Interim Report of the Independent Observer issued June 25, 2019

that CBRE-specific criteria also be considered in the evaluation process, including, but not limited to: capacity commitment to residential and/or LMI customer segments; outreach plans to target residential and LMI customer segments; and demonstration of success as a CBRE SO. As the IO notes in the Phase 1 interim report, "…some [jurisdictions] require utilities to use project viability as an evaluation criterion in scoring and selecting project proposals, and therefore take factors such as the degree of developer experience, progress towards full site control, progress in interconnection studies, and progress towards land use or construction permits into account."[25] Furthermore, in the Stage 2 RFP evaluation process after the projects are initially ranked through the non-price and price evaluation, the top ranked projects are subjected to a more detailed analysis involving production system modeling and simulations in order to better assess the overall costs and benefits of different combinations of projects and their collective impact on the system in determining a desired portfolio of projects. Overall, the Companies believe the adoption of an RFP process for Phase 2 will benefit the program and participating and non-participating customers.

The Companies recognize that a formal RFP process will be resource intensive for both SOs and administrators relative to a first-come, first-serve or a CCRP mechanism and that the implementation of an RFP process may create participation barriers for SOs developing smaller projects. The Companies recommend that for Phase 2, the RFP process is only used for projects above the RFP thresholds outlined in Table 6 and the CCRP mechanism proposed in the CBRE Framework be used to award capacity to smaller projects below the RFP participation threshold.

The Companies would like to note that the use of an RFP process for Phase 2 may result in a longer timeline than originally envisioned for the CBRE program. There are several RFP

[25] Community-Based Renewable Energy Program Interim Report of the Independent Observer issued June 25, 2019

initiatives underway competing for developer, Companies, Commission, and Participant resources for proposal development, site acquisition, permitting, construction, evaluation, interconnection, and approval. The CBRE RFP will need to be staggered with the other RFP initiatives the Companies are currently undertaking. Based on current timelines for other RFP initiatives and to incorporate feedback from the Stage 2 RFPs, the Companies would be able to submit a draft RFP to the Commission in late 2020 or early 2021. Based on timeline assumptions for issuance, selection, contract negotiation, and the actual facility buildout, the Companies expect that Phase 2 facilities would be operational by late 2024 or early 2025. The Companies recommend that the CCRP mechanism for smaller facilities be initiated before the RFP, to ensure that there is not a multi-year gap between Phase 1 and 2 CBRE facilities coming online.

Additionally, as noted in the discussion pertaining to the Program and Project Capacity, given the rapid pace of change in the Companies' generating portfolio as a result of current RFP initiatives, it will be important to re-evaluate grid needs and constraints, including program and project capacity and eligible technology, before issuing a CBRE RFP. The Companies request that if the Commission accepts the recommendation to use an RFP and allow for larger CBRE projects for Phase 2, they also allow for a re-evaluation after the Stage 2 RFP bid selection and before the CBRE RFP is issued to finalize eligible Phase 2 technologies, total Phase 2 program capacity, the percent of Phase 2 capacity allocated to projects of sizes below the RFP participation threshold, and determine if there is sufficient developer appetite for an RFP or if a competitive credit rate process should be leveraged to allocate Phase 2 capacity.

D. Residential and LMI Subscription Requirements and Incentives

The Companies are concerned with ensuring that residential Subscribers have access to and participate in Phase 2 of the CBRE program. During the discussions at the Status Conference

in January 2019, the Companies learned that Phase 1 SOs were primarily targeting commercial Subscribers with kW needs well within the requirements of the Phase 1 CBRE tariff. Both Act 100 and the CBRE Framework view CBRE as an opportunity to expand access to renewable energy resources for residential and business renters, occupants of buildings with shaded or improperly oriented roofs, and other groups who are unable to participate in onsite clean energy generation. Phase 1 SOs are fully compliant with Phase 1 rules in primarily addressing commercial Subscribers, but opportunity remains to further address the goals outlined in Act 100 by expanding residential access to renewable energy resources. The Companies want to ensure that Phase 2 does not create an outcome similar to that of Phase 1 in which SOs remain fully compliant with the Phase 2 tariff while simultaneously primarily serving commercial Subscribers.

The Companies recommend that Phase 2 incorporates a design mechanism to incentivize or require residential or LMI participation beyond the 50% allocation target required for Utility Facilities. Potential methods could include: (a) required carve outs for residential or LMI customer segments for each SO; (b) unique credit rates for residential and/or LMI customer segments to incentivize residential or LMI targeting; (c) a total program capacity allocation target set during the RFP process, allowing bids to set their own residential or LMI commitments, with a bid's commitment included as an RFP evaluation criteria; or (d) a combination of the proposed potential mechanisms.

The only residential allocation requirement established in Phase 2, outlined in the CBRE Framework, is the requirement for Utility Facilities to target LMI Subscribers: "At least 50% of Utility CBRE Facilities' subscribed capacity must be attributable to Low-to-Moderate Income

("LMI") customers."[26] Based on the Commission's recommendation on Phase 2 capacity of 64 MW, 9 MW of which is for Utility Facilities, a total of 4.5 MW would be reserved for LMI customers. Based on CBRE Framework's LMI allocation requirement for Utility Facilities only, a third party SO would be eligible to target only commercial Subscribers. Given commercial Subscribers tend to have lower acquisition costs, there is the potential that third party SOs may primarily target commercial Subscribers, meaning that without residential or LMI requirements or incentives for third party SOs, as little as 7%[27] of the total Phase 2 program capacity could be allocated to residential Subscribers. The Companies believe that such an outcome would not sufficiently meet the legislative goal of facilitating "the participation of currently underserved customers, that is, those customers that have traditionally not had access to investment opportunities in distributed renewable energy, including renters of residential households, owners of multi-unit dwelling property, nonprofit organizations, and small commercial customers."[28] The Companies recommend that the Commission implement a requirement or incentive for third party SOs to subscribe residential and/or LMI customers.

There are strategies from a program design perspective that can be used in Phase 2 to help reduce the risk of unsubscribed capacity associated with the inclusion of residential and LMI requirements. As noted in NREL's report on program design for LMI customers,[29] allowing SOs to subscribe an anchor tenant can help improve project economics and reduce the risk of customer turnover, particularly if the anchor tenant agrees to a flexible subscription. The report mentions Hawai'i's CBRE Framework in particular: "The framework proposed by the Hawai'i

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[26] See CBRE Framework attached as Exhibit A to D&O 35137, in Docket No. 2015-0389, at page 10

[27] = 4.5 MW / 64 MW

[28] 2015 Hawai'i Session Laws Act 100, §§ 1-2 at 249-251 ("Act 100"); signed into law on June 8, 2015

[29] National Renewable Energy Laboratory *Design and Implementation of Community Solar Programs for Low- and Moderate-Income Customers*, published December 2018

Public Utilities Commission allows a single anchor tenant to be any size up to 60% of a project's capacity." Secondly, a subscription model that requires an upfront payment can be a major barrier for many residential and LMI customers, ultimately increasing residential customer acquisition costs for SOs that use such a payment model. The Companies recommend that before the commencement of Phase 2, CBRE subscriptions be approved as a technology eligible for on-bill financing. Finally, allowing SOs to subscribe an entity on behalf of a group of residential or LMI Subscribers would help reduce the risk and cost of residential customer turnover. This could include a school, church, home-owners association ("HOA"), or affordable housing administrator that subscribes to the program and commits to passing on all benefits to participating tenants.

E. LMI Definition

In the CBRE Framework, the Commission required the Companies to work with stakeholders to form a definition for LMI Subscribers in preparation for Phase 2.[30] The preliminary step the Companies took in evaluating LMI metrics was to research how government agencies and non-profits in Hawai'i and CBRE programs implemented by continental utilities classify LMI households. The Federal Poverty Line, Aloha United Way's Asset-Limited, Income-Constrained, Employed ("ALICE"), and the United States Department of Housing and Urban Development ("HUD") LMI metric were identified as potential qualifying metrics. When agencies or programs use the Federal Poverty Line to classify LMI households, they frequently use a threshold of 150% or 200% of the Federal Poverty Line published by the government for the state in which the agencies or programs operate. The below graphic outlines the 2019 LMI thresholds for the three metrics for a family of four in Honolulu County.

[30] See CBRE Framework attached as Exhibit A to D&O 35137, in Docket No. 2015-0389, at page 88

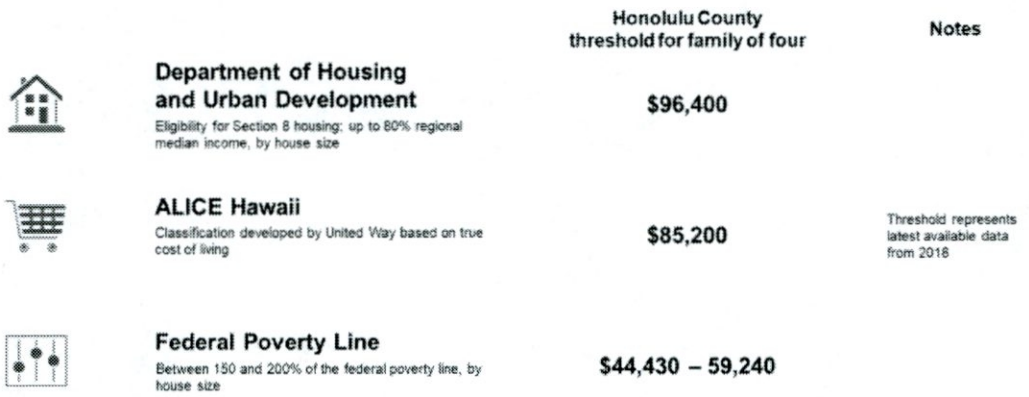

Figure 3: Evaluation of LMI metrics

The Companies worked with Aloha United Way, Hawai'i Green Infrastructure Authority ("GEMS"), the Participants, The Department of Business, Economic Development, and Tourism ("DBEDT"), and the Consumer Advocate to review the LMI metrics, discuss the benefits of the HUD metric, and gain alignment on the proposed use of HUD's LMI metric.

The Companies recommend that an LMI customer be defined according to the HUD definition for a Low- and Moderate-Income Person: 'Low- and Moderate-Income Person means a member of a family having an income equal to or less than the Section 8 low-income limit established by HUD.' HUD's Section 8 low-income limit is defined as: "A household whose income does not exceed 80 percent of the median income for the area, as determined by HUD, with adjustments for smaller or larger families. HUD may establish an income ceiling higher or lower than 80 percent of the median for the area median on the basis of HUD's finding that such variations are necessary because of prevailing levels of construction costs or fair market rents, or unusually high or low family incomes."[31]

[31] Department of Housing and Urban Development

In Hawai'i, the "area" for the purposes of calculating an area's median income is classified by county, meaning there are distinct area median incomes and LMI income limits for each county in the State of Hawai'i. The 2019 LMI thresholds for O'ahu, Maui, and Hawai'i are outlined in Table 7 below.

The HUD LMI metric is beneficial because it is reliably reported on an annual basis, is easily accessible by public parties, outlines income limits for all household sizes up to eight-person households with methodology to calculate income limits for households with more than eight individuals, and reports income thresholds for households that qualify as Extremely-Low-, Very Low-, and Low-Income.

Because CBRE programs will likely serve customers for at least 20 years, it is critical to use an LMI metric that will be available and reported on for the program's lifespan. Because the HUD LMI metric is heavily utilized by government agencies to administer support programs, there is a high likelihood of continued reporting for the entirety of Phase 2 of the CBRE program. Additionally, using a metric that is widely available to the public will ensure all SOs will have the necessary documentation to properly classify LMI Subscribers, if required. Finally, upon evaluation of other states with LMI focused CBRE programs, the Companies found that many of those states leverage HUD as an LMI metric.[32]

The Companies recognize that the recommended LMI metric is high and that there is likely a wide range of financial stability for Hawai'i families that qualify as LMI according to HUD. However, the Companies want to ensure that customers who endure regular financial stress are included in the LMI classification so that they can benefit from CBRE incentives

[32] Includes Colorado, Maryland, Washington D.C., and New York

provided to LMI households. Households that qualify as LMI under the HUD metric are eligible for government-housing, signaling that the government recognizes that these families face financial stress. The Companies, the Commission, and the Participants could explore setting unique targets for the low-income segment of LMI households. The fact that HUD reports unique income thresholds for Extremely-Low-, Very-Low-, and Low-Income households would enable these unique targets.

		Persons in Family							
		1	2	3	4	5	6	7	8
Hawai'i	Extremely Low	$16,500	$19,460	$24,540	$29,620	$34,700	$39,780	$44,860	$49,940
	Very Low	$27,500	$31,400	$35,350	$39,250	$42,400	$45,550	$48,700	$51,850
	Low	$44,000	$50,250	$56,550	$62,800	$67,850	$72,850	$77,900	$82,900
Honolulu	Extremely Low	$25,350	$28,950	$32,550	$36,150	$39,050	$41,950	$44,860	$49,940
	Very Low	$42,200	$48,200	$54,250	$60,250	$65,100	$69,900	$74,750	$79,550
	Low	$67,500	$77,150	$86,800	$96,400	$104,150	$111,850	$119,550	$127,250
Maui	Extremely Low	$20,550	$23,450	$26,400	$29,620	$34,700	$39,780	$44,860	$49,940
	Very Low	$34,200	$39,050	$43,950	$48,800	$52,750	$56,650	$60,550	$64,450
	Low	$54,700	$62,500	$70,300	$78,100	$84,350	$90,600	$96,850	$103,100

Table 7: 2019 HUD household income thresholds for LMI families by county and household size

Dated: Honolulu, Hawai'i, August 19, 2019.

KEVIN ODA
Attorney for
Hawaiian Electric Company, Inc.
Maui Electric Company, Limited
Hawai'i Electric Light Company, Inc.

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Applications of	)	
	)	
HAWAIIAN ELECTRIC COMPANY, INC.	)	Docket No. 2015-0389
HAWAI'I ELECTRIC LIGHT COMPANY, INC.	)	
MAUI ELECTRIC COMPANY, LIMITED and	)	
	)	
KAUAI ISLAND UTILITY COOPERATIVE	)	
	)	
For Approval to Establish a Rule to Implement	)	
A Community-Based Renewable Energy	)	
Program and Tariff and Other Related Matters	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that I have this date served a copy of the foregoing comments on Community-Based Renewable Energy Phase 2, together with this certificate of Service, upon the following, buy causing a copy hereof to be personally served and/or served by electronic transmission, as set forth below:

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